Issue 2 Dated 3rd July, 1958	Specification	Valve
To be read in conjunction with K1001, BS448 and BS1409	UNCLASSIFIED	UNCLASSIFIED

→ indicates a change

TYPE OF VALVE - Reliable High Vacuum. Half-wave Rectifier with flexible leads

CATHODE - Directly-heated

ENVELOPE - Glass

PROTOTYPE - VX3159, CV. 2289.

MARKING

See K1001/4

RATING

			Note
Filament Voltage	(V)	1.4	
Filament Current	(A)	0.15	
Max Peak Inverse Voltage	(kV)	15	B
Max Peak Inverse Voltage with direct switching.	(kV)	10	
Max Peak Anode Current	(mA)	12	
Max Mean Rectified Current	(mA)	2.0	
Max Shock (short duration)	(g)	500	
Max Acceleration (continuous operation)	(g)	2.5	
TYPICAL OPERATING DATA			
Sinusoidal Input			
RMS Input Voltage	(kV)	5.3	
Rectified Voltage	(kV)	7.5	
Rectified Current	(uA)	100	
Reservoir Condenser (50 c/s wkg; 15% ripple)	(uF)	0.005	
Pulse Input (see Note C)			
Leak Input Voltage	(kV)	7.5	
Rectified Output Voltage	(kV)	7	
Rectified Output Current	(uA)	100	
Optimum Reservoir Condenser	(uF)	0.001	
CAPACITANCE (pF)			
Ca-f (nom)		1.5	

BASE

None

CONNECTIONS

Lead	Electrode
Top Lead	Anode
Bottom Leads	Filaments

DIMENSIONS

See drawing on page 3

Dimension (mm)	Min.	Max.
Overall length	-	53
Diameter	-	13
Lead length	30	

MOUNTING POSITION

NOTES

A. All limiting values are absolute.

B. This rating applies to circuits where the anode voltage rises at approximately the same rate as the filament voltage, e.g. in fly-back and RF oscillator circuits. When used in power input circuits with full AC anode voltage applied on switching, the maximum peak inverse voltage is 10 kV.

C. PRF = 20 kc/s; Tp = 5/u secs.

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TESTS

To be performed in addition to those applicable in K1001

Test Conditions - unless otherwise specified

Vf (V)	Va (Vdc)
1.4	165 max

K1001	TEST	TEST CONDITIONS	AQL %	INSP. LEVEL	SYM-BOL	LIMITS MIN.	LIMITS MAX.	UNITS
7.1	Glass Strain	No voltages	6.5	I				
	GROUP A							
	Voltage Breakdown	Notes 1 & 2		100%				
	GROUP B	Combined AQL	1.0					
	Filament current		0.65	II	If	0.13	0.17	A
→	Anode Current (1)		0.65	II	Ia	6.5	-	mA
	GROUP C							
5.12	Lead Fragility	No voltages	6.5	IA				
	Anode Current (2)	Vf=0.8V; Va=165V	6.5	IA	Ia	5.0	-	mA
	Capacitances	Measured on 1 Mc/s bridge	6.5	IC	Ca-f		1.75	pF
	GROUP D	Combined AQL	6.5					
11.3	Fatigue	Vh = 1.4V switched 1 min on, 3 mins off; Va=0; Min pk accel = 5g; Frequency = 170 c/s; Duration = 30 + 30 + 39 hrs.		IA				
	Post Fatigue Tests							
	Voltage Breakdown	Notes 1 & 2	2.5					
	Filament Current		2.5		If	0.13	0.17	A
→	Anode Current (1)		2.5		Ia	5.0	-	mA
11.4	Shock	No voltages; Hammer angle = 30°		IA				
	Post Shock Tests							
	Voltage Breakdown	Notes 1 & 2	2.5					
	Filament Current		2.5		If	0.13	0.17	A
→	Anode Current (1)		2.5		Ia	2.8	-	mA
	GROUP E							
AVI/5	Life	Note 1						
AVI/5.1	Stability Life Test			I				
	Change in Anode current (1)		1.0		Ia	-	10	%
AVI/5.3	Intermittent Life Test	Note 1						
	Life Test End Point (250 hrs)	Combined AQL						
AVI/5.6	Inoperatives		2.5					
	Filament		2.5		If	0.13	0.17	A
→	Anode Current (1)		2.5		Ia	4.0	-	mA
	GROUP F							
AIX/2.5	Electrical re test after 28-day holding period.			100%				
AVI/5.6	Inoperatives		0.5					

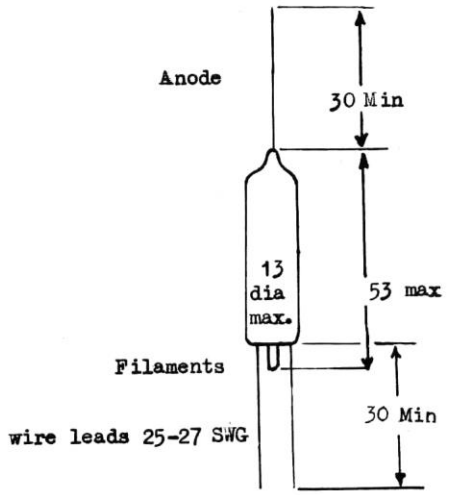
1. The valve shall be tested in a half-wave rectifier circuit with a 5.3 kV r.m.s. 50 c/s input voltage applied through a total external impedance of 100,000 ohms including effective transformer impedance. The load resistance shall be adjusted to give 100 /uA nom. Reservoir condenser = 0.1 /uF.

Alternatively, the test may be performed as follows :

F =	100 kc/s approx.
R_s =	15 M
R_L =	80 M
C =	0.001 /uF.
P.I.V. =	15 kV (nominal)
I_{DC} =	100 /uA.

2. The load conditions shall be maintained for 60 secs. There shall be no persistent sparking, blue glow or distortion of the electrodes.

Outline Drawing



All dimensions in millimetres

ELECTRONIC VALVE SPECIFICATION
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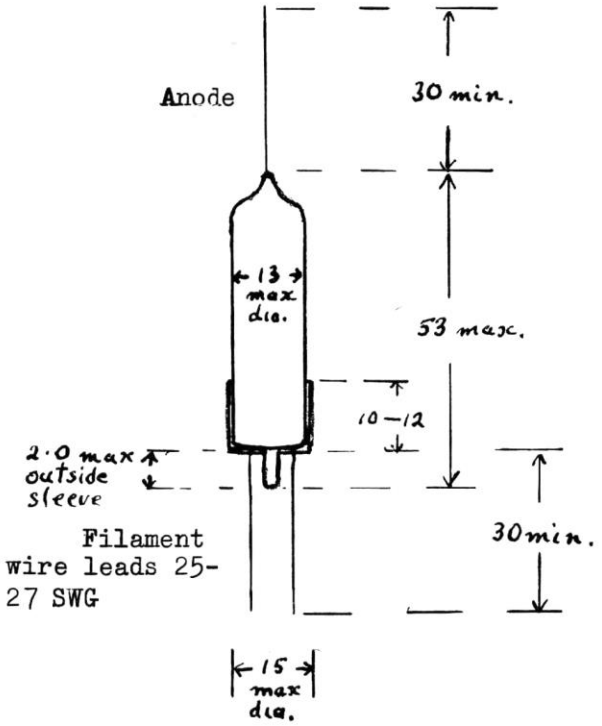
PAGE3 Outline drawing. Delete existing drawing and replace with drawing below.



All dimensions in millimetres

for R.R.E. Malvern.